IN THE CLAIMS

1. (Original) A method of preparing dimethyl carbonate, comprising:

reacting methanol, oxygen, carbon monoxide, and a catalyst to form a mixture comprising dimethyl carbonate, methyl chloroformate, hydrochloric acid, water, carbon dioxide, and carbon monoxide; and

subjecting said mixture to conditions comprising a water concentration ($[H_2O]$), a methanol concentration ($[MeOH]$), a temperature (T), and a residence time (t), such that a parameter X calculated according to the expression

$$X = \exp\{-[(2.09\times10^{9})e^{(-6381/T)}[H_2O]+(4.14\times10^{10})e^{(-7673/T)}[MeOH]]t\}$$

has a value less than about 0.9, wherein said water concentration and said methanol concentration are expressed in moles per milliliter, said temperature is expressed in degrees Kelvin, and said residence time is expressed in minutes.

2. (Original) The method of Claim 1, wherein said parameter X has a value less than about 0.2.

3. (Original) The method of Claim 1, wherein said parameter X has a value less than about 0.1.

4. (Original) The method of Claim 1, wherein said parameter X has a value less than about 0.05.

5. (Original) The method of Claim 1, wherein said parameter X has a value less than about 0.01.

6. (Original) The method of Claim 1, wherein said water concentration is about 0.1 to about 50 moles per liter.

7. (Original) The method of Claim 1, wherein said methanol concentration is about 1 to about 25 moles per liter.

8. (Original) The method of Claim 1, wherein said temperature is about 30°C to about 130°C.

9. (Original) The method of Claim 1, wherein said residence time is about 0.5 hour to about 10 hours.

10. (Original) The method of Claim 1, further comprising removing hydrochloric acid from said mixture.

11. (Original) The method of Claim 10, wherein said removing hydrochloric acid comprises reducing the concentration of said hydrochloric acid to less than about $1x10^{-3}$ moles per liter.

12. (Original) A method of preparing dimethyl carbonate, comprising:

reacting methanol, oxygen, carbon monoxide, and a catalyst to form a mixture comprising dimethyl carbonate, methyl chloroformate, hydrochloric acid, water, carbon dioxide, and carbon monoxide;

subjecting said mixture to conditions comprising an initial concentration of methyl chloroformate ($[MCF]_{t=0}$), a water concentration ($[H_2O]$), a methanol concentration ($[MeOH]$), a temperature (T), and a residence time (t), such that a parameter Z calculated according to the expression

$$Z = [MCF]_{t=0} \exp\{-[(2.09\times10^{9})e^{(-6381/T)}[H_2O] + (4.14\times10^{10})e^{(-7673/T)}[MeOH]]t\}$$

has a value less than about $5x10^{-6}$, wherein said initial concentration of methyl chloroformate, said water concentration, and said methanol concentration are expressed in moles per milliliter, said temperature is expressed in degrees Kelvin, and said residence time is expressed in minutes.

13. (Original) The method of Claim 12, wherein said initial concentration of methyl chloroformate is about $5x10^{-6}$ to about $5x10^{-4}$ moles per liter.

14. (Original) The method of Claim 12, further comprising removing hydrochloric acid from said mixture.

15. (Original) A method of preparing a dialkyl carbonate, comprising:

reacting methanol, oxygen, carbon monoxide, and a catalyst to form a mixture comprising dimethyl carbonate, methyl chloroformate, hydrochloric acid, water, carbon dioxide, and carbon monoxide; and

maintaining said mixture at a temperature of about 50°C to about 80°C for about 1 hour to about 10 hours.

16. (Original) The method of Claim 15, further comprising removing hydrochloric acid from said mixture.

17. (Original) A method of preparing dimethyl carbonate, comprising:

reacting methanol, oxygen, carbon monoxide, and a catalyst to form a mixture comprising dimethyl carbonate, methyl chloroformate, hydrochloric acid, water, carbon dioxide, and carbon monoxide; and

subjecting said mixture to conditions comprising an initial dimethyl carbonate concentration ($[DMC]_{t=0}$), an initial water concentration ($[H_2O]_{t=0}$), an initial methanol concentration ($[MeOH]_{t=0}$), an initial hydrochloric acid concentration ($[HCl]_{t=0}$), a temperature (T), and a residence time (t), such that a parameter X calculated according to the expression

$$X = \exp\{-[(2.09\times10^{9})e^{(-6381/T)}[H_2O]_{t=0} + (4.14\times10^{10})e^{(-7673/T)}[MeOH]_{t=0}]t\}$$

has a value less than about 0.9, and a parameter Y calculated according to the expression

$$Y = \frac{\left(1-\frac{[H_2O]_{t=0}}{[DMC]_{t=0}}\right)}{\left(1-\left(\frac{[H_2O]_{t=0}}{[DMC]_{t=0}}\right)\left(\exp\left(\left(6.6\times10^{10}\right)\left(\exp(-6636/T)\right)[HCl]_{t=0}[DMC]_{t=0}\left(\frac{[H_2O]_{t=0}}{[DMC]_{t=0}}-1\right)t\right)\right)\right)}$$

has a value of at least about 0.9, wherein said initial dimethyl carbonate concentration, said initial water concentration, said initial methanol concentration, and said initial hydrochloric acid concentration are expressed in moles per milliliter, said temperature is expressed in degrees Kelvin, and said residence time is expressed in minutes.

18. (Original) The method of Claim 17, wherein said parameter Y has a value of at least about 0.95.

19. (Original) The method of Claim 17, wherein said parameter Y has a value of at least about 0.99.

20. (Original) The method of Claim 17, wherein said initial dimethyl carbonate concentration is about 0.5 to about 10 moles per liter.

21. (Original) The method of Claim 17, wherein said initial hydrochloric acid concentration is about $1x10^{-3}$ to about $2x10^{-1}$ moles per liter.

22. (Original) The method of Claim 17, further comprising removing hydrochloric acid from said mixture.

23. (Original) A method of preparing dimethyl carbonate, comprising:

reacting methanol, oxygen, carbon monoxide, and a catalyst to form a mixture comprising dimethyl carbonate, methyl chloroformate, hydrochloric acid, water, carbon dioxide, and carbon monoxide; and

subjecting said mixture to conditions comprising a water concentration ($[H_2O]$), a methanol concentration ($[MeOH]$), a temperature (T), and a residence time (t), such that a parameter X' calculated according to the expression

$$X' = 1/\left[1 + [(2.09 \times 10^{9}) e^{(-6381/T)} [H_2O] + (4.14 \times 10^{10}) e^{(-7673/T)} [MeOH]]t\right]$$

has a value less than about 0.5, wherein said water concentration and said methanol concentration are expressed in moles per milliliter, said temperature is expressed in degrees Kelvin, and said residence time is expressed in minutes.

24. (Previously Presented) A polycarbonate produced by the reaction of a diaryl carbonate with a dihydric phenol wherein the diaryl carbonate is produced by the reaction of an aryl hydroxide with the dimethyl carbonate produced by the method of Claim 1.

25. (Previously Presented) A polycarbonate produced by the reaction of a diaryl carbonate with a dihydric phenol wherein the diaryl carbonate is produced by the reaction of an aryl hydroxide with the dimethyl carbonate produced by the method of Claim 12.

26. (Previously Presented) A polycarbonate produced by the reaction of a diaryl carbonate with a dihydric phenol wherein the diaryl carbonate is produced by the reaction of an aryl hydroxide with the dialkyl carbonate produced by the method of Claim 15.

27. (Previously Presented) A polycarbonate produced by the reaction of a diaryl carbonate with a dihydric phenol wherein the diaryl carbonate is produced by the reaction of an aryl hydroxide with the dimethyl carbonate produced by the method of Claim 17.

28. (Previously Presented) A polycarbonate produced by the reaction of a diaryl carbonate with a dihydric phenol wherein the diaryl carbonate is produced by the reaction of an aryl hydroxide with the dimethyl carbonate produced by the method of Claim 23.